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DEFENSE LOGISTICS AGENCY
PRODUCT VERIFICATION PROGRAM

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Abstract This is the second of two reports being issued by the Inspector General, DoD, which addresses various aspects of the Defense Logistics Agency Product Verification Program. The Product Verification Program was established in January 1995 to consolidate test program management and activities for improved efficiency, consistency, and reduced operational costs. In FY 1999, the Product Verification Program managers reported operational costs of \$6.6 million and tested over 10,000 items. This report addresses how products were selected for testing and how the test results were used.		
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Acronyms

DLA
PVP

Defense Logistics Agency
Product Verification Program



INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-4704

February 21, 2001

MEMORANDUM FOR DIRECTOR, DEFENSE LOGISTICS AGENCY

SUBJECT: Audit Report on the Defense Logistics Agency Product Verification
Program (Report No. D-2001-054)

We are providing this report for your information and use. We conducted this audit to determine how items purchased and stocked by the Defense Logistics Agency were selected for testing and how the test results were used.

The Defense Logistics Agency comments conformed to the requirements of DoD Directive 7650.3; therefore, additional comments are not required.

Questions on the audit should be directed to Mr. Nicholas E. Como at (703) 604-9215 (DSN 664-9215) (ncomo@dodig.osd.mil) or Mr. Terry L. McKinney at (703) 604-9288 (DSN 664-9288) (tmckinney@dodig.osd.mil). See Appendix D for the report distribution. The audit team members are listed inside the back cover.

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Report No. D-2001-054

(Project No. D2000CF-0111.001)

February 21, 2001

Defense Logistics Agency Product Verification Program

Executive Summary

Introduction. This is the second of two reports being issued by the Inspector General, DoD, which addresses various aspects of the Defense Logistics Agency Product Verification Program. The Product Verification Program was established in January 1995 to consolidate test program management and activities for improved efficiency, consistency, and reduced operational costs. In FY 1999, the Product Verification Program managers reported operational costs of \$6.6 million and tested over 10,000 items. This report addresses how products were selected for testing and how the test results were used.

Objectives. Our objective was to evaluate whether the Defense Logistics Agency was effectively managing the Product Verification Program. Specifically, the audit determined how products were selected for testing and whether the program's testing plan was adequate. The audit also determined whether the Product Verification Program managers and quality assurance specialists were using the test results to identify contractor problems and purge potentially defective products from the Defense Logistics Agency depots. We also reviewed the management control program as it related to the overall audit objective.

Results. The Defense Logistics Agency product test center planning procedures were logical and in conformance with test objectives. Testing was conducted using contract specifications and objectives, appropriate test equipment was used, and suspected deficiencies were evaluated. However, the product test selections and the use of test results needed improvement. Random product test selections did not include all products available for testing at all depots. For nonrandom testing, the Product Verification Office did not fully consider management's quality priorities and initiatives in test planning. As a result, funds for product testing were not used in the most efficient manner and DoD lacked sufficient assurance that some critical products would perform as expected (finding A). For two of the three Defense Supply Centers, test failures were not consistently investigated and required actions on test failures were not always taken. Inconsistent adjudication and ratings of test results hindered the two Defense Supply Centers from resolving contractor issues for 36 percent of the 231 FY 1999 tests we reviewed, inflated quality ratings for as many as 54 contractors and allowed potentially nonconforming products to remain available for issue (finding B). See Appendix A for details on the management control program.

Summary of Recommendations. We recommend that the Director, Defense Logistics Agency, establish random testing selection methods, and implement nonrandom testing initiatives. We also recommend that the Director, Defense Logistics Agency, develop and implement uniform training for quality assurance specialists and supervisory review procedures. We also recommend documenting causative factors of test failures and determining whether nonconforming products should be suspended or reevaluated.

Management Comments. The Defense Logistics Agency stated that it is developing a new random testing selection program by Fiscal Year 2002 that will include the recommended criteria for selection. The Defense Logistics Agency agreed to implement nonrandom testing initiatives prescribed in its agency guidance and agreed to perform trend analyses from quality deficiency reports. The Defense Logistics Agency also agreed to enhance existing training and supervisory review programs for Quality Assurance Specialists and has begun to reevaluate and take appropriate corrective action on the test results disclosing nonconforming products identified in this report. See the Finding section of the report for a discussion of management comments and to the Management Comments section of the report for the complete text of the comments.

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Background

Product Verification Program. The Product Verification Program (PVP) was created in January 1995 by Defense Logistics Agency (DLA) Directive 4105.20. The Product Verification Program replaced the Contractor Assessment Product Evaluation Program. The program establishes the policies and responsibilities for laboratory testing and product verification and includes all testing performed within the supply centers. The primary objectives of PVP are to improve the process of delivering logistical support at reduced costs by:

- providing quality material that meets DLA customer requirements,
- reducing failure costs incurred for nonconforming material received from suppliers by verifying conformance of material to contract specifications, and
- utilizing supplier's past performance for future source selections and "best value" contracting decisions.

In FY 1999, 22 personnel were assigned to the PVP at the Defense Supply Centers. Over 4,700 products were randomly selected for testing and about 5,600 products were tested on a nonrandom basis during FY 1999. These 10,300 product tests resulted in nearly 1,200 laboratory test failures. The FY 1999 operating budget for the PVP was \$6.6 million. The supply centers reported critical and major defects between FYs 1998 to 2000 ranging between 12 and 18 percent of the DLA-managed products tested.

Objectives

Our objective was to evaluate whether the Defense Logistics Agency was effectively managing the PVP. Specifically, the audit determined how products were selected for testing and whether the program's testing plan was adequate. The audit also determined whether PVP managers and quality assurance specialists were using test results to identify contractor problems and purge potentially defective products from the DLA depots. We also reviewed the management control program as it related to the overall audit objective. See Appendix A for a discussion of the audit process and the management control program review.

A. Product Selection for Quality Testing

The Product Verification Program office had not established a uniform process to select DLA managed products for quality testing. The process was ineffective because all available products were not included for random testing and product criticality was not considered. Further, management initiatives were not fully implemented to select products for testing based on factors such as high requisition rates, high cost, or high-potential failure rates for nonrandom testing. As a result, testing resources were not expended efficiently.

Random Selection Criteria and Application

DLA Directive 4105.20, Product Verification Program for Inventory Control Points, January 20 1995, directs PVP offices at Defense Supply Centers to perform random laboratory testing of the following categories of incoming material.

- Material identified on new contracts less than 3 years old.
- In-stock material identified on contracts older than 3 years old.
- Material with the highest failure costs identified on weapon and safety critical parts.

Sampling Assistance Model. DLA employed the “Sampling Assistance Model,” to generate a statistically valid selection of DLA managed products for quality testing. The model was developed and maintained by the Operations Research and Resource Analysis office. This office generated a quarterly listing of randomly selected products by national stock number for each Defense Supply Center. The PVP offices at the Defense Supply Centers used information from the quarterly listings to select inventory products for quality testing.

Products Subjected to Random Testing

The random product selections did not include all products that were stocked at all the depots. The products subjected to random testing were limited to products stocked at the two primary distribution sites, San Joaquin, California, and New Cumberland, Pennsylvania, and the Richmond Distribution Center. Therefore, randomly selected products were not included from the remaining 21 DLA depots (the nonprimary distribution sites). During June 2000, the Operations Research and Resources Analysis office provided information on the location of DLA managed products. Table 1 shows the location and percentages of DLA products that were part of the random sample universe.

Table 1. Location of DLA Products (in millions)					
	Total Products Stocked at all DLA Depots	Stocked at Primary Distribution Sites	Percent Stocked at Primary Distribution Sites	Stocked at Nonprimary Distribution Sites	Percent Stocked at Nonprimary Distribution Sites
Columbus	1,175	677	58	498	42
Richmond	617	253	41	364	59
Philadelphia	659	326	49	333	51
Total	2,451	1,256	51	1,195	49

A total of nearly 1.2 million products, or 49 percent of the DLA stocked products, were located in the nonprimary distribution sites and were not included in the random sample universe. Examples of products stocked in nonprimary distribution sites that failed nonrandom testing but were never tested on a random basis were:

- a mirror head and support valve assemblies used on the heavy expanded mobility tactical truck, and
- a gear shaft that was housed on the F-18 fighter jet.

These critical products should have been included in the universe for random testing.

Random Selection Categories

For FY 1999, the sampling practices of the PVP offices at the supply centers were not in full compliance with the random selection categories outlined in DLA Directive 4105.20. The random sample universe was used to select from both a total and limited universe of DLA products scheduled for delivery within 6 months of the fiscal quarter. Table 2 displays the categories and number of random tests conducted by each supply center during FY 1999.

Table 2. Random Tests Performed by Category – FY 1999			
	Columbus	Philadelphia	Richmond
Overall inventory (contracts > 3 years)	866	420	651
New receipts (contracts < 3 years)*	744	296	137
Weapon system critical components	-	-	806
Customer item transfers	785	-	-
Total	2,395	716	1,594

*Limited to contracts with scheduled deliveries within 6 months.

Only the PVP office at the Richmond supply center randomly tested weapon system critical components. The components included structural aircraft components, helicopter rotor blades, jet turbine engines, and aircraft fuel system components. The PVP offices at the Philadelphia and Columbus supply centers did not randomly test inventory specifically identified as critical.

Random Tests of Critical Items. We further analyzed selected products to determine criticality within the random selection categories. The supply centers did not consider product criticality when DLA managed products were randomly selected for quality testing. Table 3 shows that only 44 to 51 percent of the randomly tested products were listed in the DLA database as critical products.

Table 3. Criticality of Randomly Tested Products - FY 1999					
	Products Tested	Critical Products	Percent of Critical Products	Non-critical Products	Percent of Noncritical Products
Columbus	900*	400	44	500	56
Richmond	1,594	806	51	788	49
Philadelphia	716	363	51	353	49
Total	3,210	1,569		1,641	

*Review limited to 900 of the 2,398 random products tested.

The DLA guidance specifically addresses product criticality for random product testing. Tests were required for items with the highest potential failure rate. Critical products included all products identified as weapon system critical, safety critical, or all other parts identified as critical applications.

Cost of Noncritical Items. We further analyzed the unit cost of noncritical items that were selected for random testing in FY 1999. Unit cost information

was available for only 1,063 of the 1,641 (65 percent) noncritical items randomly selected for testing. Table 4 displays the unit cost range for the 1,063 noncritical items randomly selected for testing.

Table 4. Unit Cost of Randomly Selected Noncritical Items for Testing FY 1999		
Unit Cost Range	Number of Items	Percent
No unit cost data available	578	35
Less than \$2	161	10
\$2 to \$10	300	18
\$10 to \$50	290	18
\$ 50 to \$100	114	7
\$ 100 to \$ 500	140	9
\$ 500 to \$1,000	32	2
\$1,000 to \$2,000	24	1
Greater than \$2,000	2	-
Total	1,641	100

Over 50 percent of the noncritical items that were randomly selected for testing had unit costs of less than \$100. Selecting low-cost, noncritical items for testing further compromised efficient expenditures of testing resources.

Direct Vendor Deliveries. The PVP offices had no program in place for testing products procured through the Direct Vendor Delivery Program. These products were not stored in the depot system for DoD customer use. Instead, the vendors participating in this program shipped products directly to DoD customers. As of October 1999, 56 contractors were providing direct vendor delivery to DLA. This form of supply management is seemingly the way future deliveries will be completed. Accordingly, the PVP offices must address how these products will be incorporated into the Direct Vendor Delivery Program.

Nonrandom Selection Criteria

The product verification program manager must develop and implement nonrandom testing initiatives to identify, preclude acceptance of, or remove high-potential-for-failure products from inventory. The initiatives should be based on customer or internal DLA management feedback, complaints, or random test results. Nonrandom tests were also directed for the following types of products:

- with known or potential problems,
- procured from high-dollar value or high-volume contracts,

- products that were highly requisitioned, and
- procurements from contractors with poor past performance history.

DLA Instruction 4155.2, "Quality Assurance Program Instruction for DLA," February 17, 1999, further suggests that the supply centers perform trend analyses of products found to be deficient on a recurring basis.

Table 5 displays the number of nonrandom testing conducted by the three PVP offices during FY 1999.

Table 5. Nonrandom Tests Performed - FY 1999	
	Number of Nonrandom-Tests
Columbus	2,807*
Richmond	407
Philadelphia (general and industrial)	341
Philadelphia (clothing and textiles)	2,032
Total	5,587
* The Electronics Laboratory, prior to reorganization, conducted 1,675 of the 2,807 tests.	

Nonrandom Selection Procedures

Supply center PVP offices performed nonrandom tests on specific products, or groups of products, when Military Departments or quality assurance specialists at the supply centers requested assistance. The Defense Supply Center Philadelphia's Clothing and Textiles Division also nonrandomly tested cloth samples prior to fabrication of clothing apparel. The PVP offices conducted nonrandom testing in support of the Counterfeit Material/Unauthorized Product Substitution Program. The offices also performed contract mandated testing on preaccepted products from a contractor, the first article produced by a contractor, and portions of the contractor's production.

Uniformity of Nonrandom Selection Procedures. DLA Directive 4105.20 establishes guidelines for a nonrandom product verification selection process. The guidelines ensure that the most costly, critical, and safety-related products having a history of suspicious quality, are constantly subjected to quality review and possible verification testing. The following paragraphs summarize the nonrandom product selection processes implemented by each supply center during FY 1999.

- **Defense Supply Center, Columbus.** The Columbus Electronics Division tested electronics products from contractors with histories of known problems. This testing was discontinued after the Electronics Test Laboratory was reorganized and relocated from Dayton, Ohio, to Columbus, Ohio. The Electronics Test

Laboratory conducted 1,675 tests prior to termination. During FY 1999, the Columbus Center initiated a “test for cause” program on new contract awards. This program compared new contract awards against contractors with poor performance records. The test for cause program was used exclusively at the Columbus Center.

- **Defense Supply Center, Richmond.** The Richmond Center established the “product receipt-inventory control point/depot evaluation pilot” program. This program identified newly acquired products that were critical, highly requisitioned, and had a history of past deficiencies. The program was terminated during FY 1999 after 100 tests resulted in two test failures. The Richmond Center planned to initiate a flight safety critical program in FY 2000.
- **Defense Supply Center, Philadelphia.** The Philadelphia Center had not established a nonrandom process to identify critical, highly requisitioned products with a history of past deficiencies. Nonrandom tests were performed to create new diagrams, eliminate duplicate products, and support Army and Air Force quality issues on critical products.

The supply center PVP offices had not consistently implemented standard DLA quality initiatives or reported results of trend analyses of product tests that identified product quality concerns and provided the basis for nonrandom testing. Aside from the Counterfeit Material/Unauthorized Product Substitution program tests, testing mandated by contract or requested testing, the nonrandom selection process did not fully comply with the DLA directive.

Trend Analyses for Recurring Deficiencies

Customers that requisitioned DLA managed products reported instances of poor quality or nonconformity on a Product Quality Deficiency Report. The report provided DoD managers with a valuable tool that quickly identified product and contractor deficiencies before the logistical pipeline was overburdened with nonconforming items. Prior IG, DoD, audit reports (and Finding B of this report) indicated that DLA had not fully obtained the potential benefits from the Product Quality Deficiency Report program. The quality assurance program, when effectively implemented, will provide an invaluable management oversight mechanism for DoD logistics management.

FY 1999 Deficiency Reports. During FY 1999, DLA customers forwarded over 8,000 quality deficiency reports to the three supply centers’ for review and resolution. Quality assurance specialists were required to take corrective action on individual deficiency reports. However, during FY 1999, the supply centers did not perform any trend analyses of recurring deficiencies.

Analysis of Deficiency Reports. We reviewed FY 1999 quality deficiency reports for DLA managed products that were defined as critical, requisitioned more than 15 times, and with unit values in excess of \$250. We also reviewed historical deficiency reports. Overall, we reviewed 442 deficiency reports

corresponding to 245 DLA managed products and found that 37 products either warranted testing or highlighted a need for contractor surveillance. In addition, seven other products required updated technical data or revised diagrams. The following paragraphs are examples of recurring deficiencies where product testing was not proposed and corrective action was not taken.

As of July 2000, several complaints were received regarding an AH-64 Apache helicopter power control lever. We questioned whether flight control mechanism testing was required to determine the nature of the problem. After conferring with the quality assurance specialists, the specialist agreed that testing would have determined the nature of the reported deficiency.

As of July 2000, 10 deficiency reports were submitted on an electrical lead conduit device. The customers considered the conduit unserviceable. We spoke to PVP office personnel and they concurred that verification testing would have shown contractor noncompliance. A trend analysis will provide beneficial insight on those products that warrant testing and corrective action.

Recommendations, Management Comments and Audit Response

A. We recommend that the Director, Defense Logistics Agency:

1. Establish random testing selection methods in Defense Supply Center product verification programs to:

- a. Sample all stored depot products.**
- b. Factor product criticality.**
- c. Include direct vendor delivery procurements.**

Management Comments. The Defense Logistics Agency nonconcurred and stated that it is currently developing a new program to randomly select products for testing. The program uses a total quality cost methodology and will consider product selection criteria based on depot location, product criticality, delivery methods, and customer complaint trends. This program is scheduled to replace the current random selection method in FY 2002.

Audit Response. Although the Defense Logistics Agency nonconcurred with the recommendation, actions proposed to improve the random selection of products for testing satisfies the intent of the recommendation. No further comments are required.

2. Implement nonrandom testing initiatives prescribed in Defense Logistics Agency Directive 4105.20.

3. Prepare trend analyses from quality deficiency reports to identify nonconforming inventory for the following products:

- a. Critical.**
- b. Highly requisitioned.**
- c. High-cost, high-dollar, or high-volume.**
- d. Items with known or potential deficiencies.**
- e. Items from contractors with poor performance histories.**

Management Comments. The Defense Logistics Agency concurred and will implement nonrandom testing initiatives prescribed in the Defense Logistics Agency Directive and will focus on testing particular items, locations, and suppliers based on potential risk and past performance. Also, the Defense Logistics Agency will direct its supply centers to implement existing Defense Logistics Agency policy to perform trend analyses from quality deficiency reports. The agency added that the program being developed will randomly select products for testing and also will identify trends of repetitive product deficiencies.

B. Use of Test Results

Test failures were not always investigated and subsequent corrective actions were not always completed on tested products. Two supply centers inconsistently rated finalized test results and the other center lost accountability for 22 failed test results from an automated database. These test failures and lost results occurred because quality assurance specialists needed additional training and supervision. As a result, inconsistent ratings and adjudication of test results hindered the centers' efforts to resolve contractor issues of quality for 83 of 231 (36 percent) FY 1999 finalized product tests, inflated quality ratings for 54 DLA contractors, and made potentially nonconforming products available for issue.

Test Results Criteria

Quality Assurance Policy. Defense Logistics Agency Directive 4155.2, "Quality Assurance Program for the Defense Logistics Agency Inventory Control Points," October 10, 1997, prescribes that reports of deficient material should be adequately and completely investigated and properly documented. Quality assurance personnel were required to determine the necessary corrective action, address the cause of the deficiency, and reflect results of contractor-caused deficiencies in the contractor quality scoring system database.

Quality Assurance Responsibility. Defense Logistics Agency Instruction 4155.2 "Quality Assurance Instruction for DLA ICP's" (Supply Centers), February 17, 1999, discusses the use of the cause code, "simplified investigation," for noncritical items, test results disclosing minor defects, or product tests of low dollar value. However, the quality assurance specialist was directed to assign the "contractor noncompliance" cause code when the specialist was convinced that the contractor caused the defect. The instruction further addresses corrective actions when quality testing reveals defective products. Corrective actions that addressed existing deficiencies included: issuing alert notifications to supply screening points and users, inspecting existing inventories, and recommending contractual warranty enforcement issues to the contracting officer. Other examples of corrective actions that precluded product deficiency reoccurrences were: recommending specification or drawing changes to the engineering support organization, if applicable; modifying the technical data file, if necessary; and providing deficient product information to contracting and logistics offices.

Investigating and Scoring Test Results

In FY 1999, DLA reported that nearly 10,000 products were quality tested and nearly 1,200 products failed laboratory testing. The test failures ranged from minor defects that would not impair product use or operation, to major defects that would leave the products nonoperational. The PVP records disclosed that 671 deficiency reports were finalized in FY 1999. We screened the deficiencies

for 671 finalized FY 1999 Product Quality Deficiency Reports. The screenings only included the deficiencies that addressed quality issues, resulted in a reported cause code of contractor noncompliance, or a simplified investigation or no investigation. We further screened the deficiencies for reported disposition actions that resulted in tested products being returned to stock, used without modification, or where no action on the tested product was deemed necessary. A total of 231 of the 671 reported quality deficiencies met these cause and disposition characteristics. For the 231 deficiencies, we appraised the consistency of the quality assurance specialists' evaluation process to determine the cause of and resulting disposition action of the quality deficiency. Table 6 displays our analysis of the FY 1999 finalized test results.

Table 6. Analysis of Finalized Test Results – FY 1999				
	Total Test Results Finalized in FY 1999	Test Results Reviewed	Test Failures Properly Processed	Percentage of Test Failures Not Properly Processed
Columbus	553	154	105	32
Richmond	101	60	44	34
Philadelphia	17	17	17	0
Total	671	231	166	36

Defense Supply Center, Columbus. Quality assurance specialists properly identified actual causes and provided appropriate disposition actions for 105 of 154 deficiency reports. The 105 deficiency reports included 72 reports that properly identified contractor noncompliance as the cause of the deficiency. The remaining 33 deficiency reports properly identified causes supporting a simplified investigation or no investigation. Quality assurance specialists improperly coded test results for 49 of 154 deficiency reports when the results revealed that the contractor caused the test failures. Thirteen of the 49 test failures were reported as major deficiencies. Twenty of the 49 test failures involved critical items. We interviewed 13 quality assurance specialists that reviewed 34 of the 49 deficiency reports to determine their rationale for not coding the cause of the deficiency report as contractor noncompliance. The quality assurance specialists provided the following information regarding the test results.

- The quality assurance specialist could not identify the contractor or contract number of the tested product; thus, the specialist contended that no remedy was available from the contractor.

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- The defect was considered minor (although the reported deficiency was not cosmetic in nature).
 - No previous complaints were raised against the contractor or the tested product.
 - Low-dollar value or age of the tested product.
 - Disagreement with the test results or with the product specifications.

The quality assurance specialists applied inconsistent criteria when the actual causes of the deficiencies were disclosed. The specialists did not take any corrective action or provide any test result notifications to the supply points for 22 of the 49 improperly coded deficiency reports. Twelve of the 22 products that had no corrective action involved critical products, and 3 of the 12 critical products encountered major test failures. These major test failures involved avionics components for fighter and cargo aircraft, helicopters, and microcircuits for fighter aircraft. Products with the same or similar defects may be in the supply system because notifications were not circulated. We notified the PVP manager of major test failures encountered on critical products in an effort to facilitate the corrective action process. Uniform investigative procedures should be addressed in a standard training program.

Defense Supply Center, Richmond. Quality assurance specialists properly identified actual causes and provided appropriate disposition actions for 26 of 60 deficiency reports. Twenty deficiency reports properly identified contractor noncompliance as the cause of the deficiency. The remaining six deficiency reports properly identified causes that supported simplified investigations or no investigations. Quality assurance specialists improperly coded test failures for 19 of 60 deficiency reports when test results revealed that the contractor was at fault. The remaining 15 test failures were dismissed without investigation. Ten of the 34 test failures were classified as major deficiencies, 17 of the 34 test failures involved critical items. We interviewed 6 quality assurance specialists that reviewed the 34 deficiency reports to determine their rationale for not coding the cause of the deficiency report as contractor noncompliance. The quality assurance specialists provided the following information regarding the test results.

- One quality assurance specialist summarily dismissed 15 deficiency reports contending that the age of the tested products and the lack of investigative personnel precluded further action.
- A possible inventory shortage of the test-failed product would result from suspending it from subsequent issue.
- The contracting office disagreed that the contractor was at fault and changed the cause of the deficiency.
- The quality assurance specialist did not wish to “punish” the contractor for minor defects disclosed in product testing.

Again, quality assurance specialists applied inconsistent criteria when the actual causes of the deficiencies were disclosed. The specialists did not take corrective action or provide notifications to supply points for 22 of 34 finalized deficiency reports. Fifteen of the 22 products that had no corrective action were critical and 7 of the 15 critical products had major test failures. These major test failures involved fighter and cargo aircraft, helicopters, radar equipment and tank parts. Inventory integrity may have been compromised by the lack of corrective actions taken on major failures involving critical products. We notified the PVP manager of major test failures encountered on critical products in an effort to facilitate corrective actions.

Defense Supply Center, Philadelphia. Automated records from the Philadelphia center indicated 17 finalized FY 1999 quality deficiency reports. The reports properly identified the cause, and disposition actions were commensurate with the decisions rendered in the tested product. However, we discovered a management control weakness involving reporting test result failures to the automated database for subsequent investigation and dissolution. We identified 22 test failures representing over 38,000 components for F-15 fighter jets, C-130 cargo aircraft, and the Navy DDG class destroyer. We addressed our concerns to the Commander, Defense Supply Center, Philadelphia, on June 8, 2000. The commander took immediate corrective action and provided detailed written responses on July 19, 2000. See Appendix B for the inventory integrity issue, and Appendix C for the corrective action responses.

Impact of Deficiency Report Codes

Past Performance. A contractor's past performance information was collected and translated into a numeric score using the automated best value computerized system. The contracting officer used this score in the evaluation process when awarding contracts. Contractors received performance scores for each Federal supply class procurement and may have multiple scores. However, contractors had one Defense Logistics Agency score, which compiled the contractor's Federal supply score for all business conducted with the agency. The quality was reduced when deficiency report results were coded as contractor noncompliance.

Contractor Quality Scores. We evaluated the impact on the Automated Best Value System for 60 of 83 deficiency reports that should have been coded as contractor noncompliance. The 60 deficiency reports affected the overall scores of 54 contractors. The Defense Supply Center, Columbus, scoring range should have been reduced between .05 percent and 20 percent for the average Federal supply class score. The Defense Supply Center, Richmond, scoring range should have been reduced between .05 percent and 13.3 percent for the average Federal supply class score. Conversely, we confirmed that contractor quality scores were properly reduced when the contractor was rated noncompliant on the deficiency report. When the deficiency reports were improperly coded as contractor compliance, scores for quality were overstated, did not reflect the actual contractor performance, and earned the contractor an advantage on future contract awards.

Nonconforming Product Implications. Financial and inventory quality implications were impacted when investigations and corrective actions were not completed on nonconforming products. Although test results disclosed deficiencies, little, if anything was done to ensure that deficient items were not in inventory or issued to customers. As a minimum, items from the same lots as the deficient items should be reviewed. Table 7 displays the potential inventory and financial impact of the 587 quality deficiency reports that were closed in FY 1999. We identified at least 362 contractors that provided DoD items reported as deficient on the 587 quality deficiency reports. These vendors provided at least 456,000 items, valued at over \$3.9 million, between 1998 and 2000.

Supply Center	FY 1999 Deficiency Reports	Identified Products	Identified Contractors	Products Procured 1998 to 2000	Product Value
Columbus	469	421	267	403,236	\$3,364,934
Richmond	101	93	90	42,277	\$545,819
Philadelphia	17	17	5	10,715	\$47,078
Total	587	531	362	456,228	\$3,957,831

We recognize that not all the items purchased from the 362 contractors were deficient. However, we also believe that when a contractor produced one deficient item, others may follow, which increased the risks substantially. By not citing the contractor as noncompliant, financial remedy was lost. Inventory quality was also diminished when corrective actions were not taken on products that ultimately were issued and not fully operational. Major quality deficiencies should trigger the need for additional product tests from a contractor's products to determine whether the deficiency was pervasive to the remaining inventory. Finally, additional testing of other products purchased from a contractor that provided nonconforming products may also be warranted.

Quality Assurance Management

The deficiency report inconsistencies were not uniformly distributed at all supply centers. We analyzed inconsistent deficiency reports at the Defense Supply Centers, Columbus and Richmond. Forty-five of 49 (92 percent) deficiency reports were concentrated in 2 of the 4 operating elements at the Defense Supply Center, Columbus. Twenty-five of 34 (74 percent) of the deficiency reports were concentrated at 3 of the 11 operating elements at the Defense Supply Center, Richmond. Quality assurance specialists and supervisory reviews were not evident during the evaluation and final adjudication of deficiency reports at these supply centers. Quality assurance management at the Defense Supply Center, Columbus, is planning to institute

procedural instructions for supervisors to administer review and oversight procedures. A DLA training program would uniformly strengthen the decision making process for all personnel.

Recommendations and Management Comments

A. We recommend that the Director, Defense Logistics Agency:

1. Develop and implement quality assurance specialist training and supervisory review procedures at Defense Supply Centers to uniformly require the quality assurance specialist to:

- a. Determine whether the contractor was at fault as a result of a test failure generated from a product verification program test.**
- b. Document the causative factors for product test failures.**
- c. Code all contractor noncompliance performance test failures.**
- d. Document disposition and corrective actions for failed product inventories with failed test results.**

2. Using FY 1999 test results, determine whether nonconforming products purchased from contractors and stocked in depots should be suspended or reevaluated.

Management Comments. The Defense Logistics Agency concurred and stated that implementation of current Defense Logistics Agency Directives and Instructions will address all areas listed as deficient in this report. In addition, the agency stated that certification procedures outlined in the Quality Assurance Technical Development Program and through on-the-job training will properly address deficiencies in quality deficiency reporting. The Defense Logistics Agency stated that it has begun to reevaluate and take appropriate corrective action on the FY 1999 test results identified in this report.

Appendix A. Audit Process

Scope

Work Performed. For our analysis of product selection for quality testing, we obtained a listing of 4,705 FY 1999 randomly selected products from the Product Verification Program offices. We analyzed the criticality for 3,210 of the 4,705 randomly selected products and costs for 1,063 nonrandomly selected products to determine whether the products met the criteria in DLA Directive 4105.20, "Product Verification Program for Inventory Control Points," January 1995. We analyzed 245 nonrandomly selected products to determine whether the supply centers selected products in accordance with management initiatives.

For our analysis of the use of test results, we obtained and evaluated 231 product test failures that were documented by the program. The supply centers compiled a listing of 1,163 FY 1999 laboratory test failures. We limited our analysis to 231 test failures generated from program testing that involved quality discrepancies with corresponding disposition action that resulted in the tested product being returned to stock, used without modification, or no further action was taken. We subsequently analyzed whether quality assurance specialists properly rated the test failures, their severity, and whether the test result warranted corrective action. We also measured the impact of improperly evaluated test results on the Automated Best Value System that measures a contractor's quality performance. We measured 60 deficiency reports affecting the system scores of 54 contractors.

DoD-Wide Corporate Level Government Performance and Results Act (GPRA) Goals. In response to GPRA, the Secretary of Defense annually establishes DoD-wide corporate level goals, subordinate performance goals, and performance measures. There is no DoD-wide goal that specifically addressed quality of DoD material assets.

General Accounting Office High-Risk Area. The General Accounting Office has identified several high-risk areas in the DoD. This report provides coverage of the Defense Inventory Management high-risk area.

Methodology

Use of Computer-Processed Data. We relied on computer-processed data from the DLA Standard Automatic Material Management System. From this automated system and its subsystems, we obtained universes of random and nonrandom selected products for testing. We relied on the Defense Logistics Agency Customer Depot Complaint System for customer and PVP-generated Product Quality Deficiency Reports. We relied on the Automated Best Value System to obtain contractor quality scores. Although we did not perform a formal reliability assessment of the computer-processed data, the information obtained generally agreed with the information in the computer-processed data.

We did not find errors that would preclude use of the computer-based data to meet the audit objectives or that would change the conclusions in this report.

Audit Type, Dates, and Standards. We performed this program audit from March to October 2000 in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD. We included tests of management controls considered necessary.

Contacts During the Audit. We visited or contacted individuals within DoD. Further details are available upon request.

Management Control Program Review

DoD Directive 5010.38, "Management Control (MC) Program," August 26, 1996, and DoD Instruction 5010.40, "Management Control (MC) Program Procedures," August 28, 1996, require DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

Scope of the Review of the Management Control Program. In IG, DoD, Report No. D2001-002, "Defense Logistics Agency Customer Return Improvement Initiative," October 12, 2000, we reviewed the adequacy of the Product Verification Program management controls over the screening of potentially nonconforming products received through customer returns. We reviewed the accuracy and the extent that the Customer Return Improvement Initiative exercised in notifying depots of potentially defective products. During this audit, we reviewed the adequacy of the management controls over the use of test results derived from Product Verification Program testing. Specifically, we appraised management controls, including supervisory review and oversight, that would consistently identify and record the source, disposition and possible correction of products that failed quality testing. We did not review management's self-evaluation applicable to these controls.

Adequacy of Management Controls. We identified material management control weaknesses during the review of the Customer Returns Improvement Initiative Program and in the use of test results derived from Product Verification Program testing, as defined by DoD Instruction 5010.40. Management controls for the Customer Returns Improvement Program were not adequate to ensure that potentially defective products received through customer returns were made available for issue at some DLA depots. Likewise, management controls for the use of test results derived from Product Verification Program testing were not adequate to ensure that consistent and effective test results data was recorded and subsequent corrective action were taken to prevent potentially nonconforming products from becoming available for issue. Recommendations 1 and 2 of the Customer Returns Improvement Initiative Program report, and Recommendations B.1.a., B.1.b., B.1.c. and B.1.d. of this report, if implemented, will improve the overall integrity of DLA

managed products. A copy of both reports will be provided to the senior official responsible for management controls in the Defense Logistics Agency.

Prior Coverage

Inspector General, DoD, Report No. D-2001-002, "Defense Logistics Agency Customer Returns Improvement Initiative Program," October 12, 2000.

Appendix B. Test Results – Defense Supply Center, Philadelphia (Alert Memorandum)



INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-2885

JUN 8 2000

MEMORANDUM FOR COMMANDER, DEFENSE SUPPLY CENTER PHILADELPHIA

SUBJECT: Inventory Integrity – Nonconforming Items

As part of our audit of the Defense Logistics Agency Product Verification Program, we observed an ongoing condition that warrants your immediate attention. At the Defense Supply Center, Philadelphia, Pennsylvania, we noted an internal management control weakness affecting quality assurance procedures within the General and Industrial Directorate. Specifically, we found that all test failures under the Product Verification Program involving consumable items managed by the General and Industrial Directorate were not reported in the automated logistical database nor subsequently investigated or disposed of appropriately. As a result, nonconforming items (test failures) may have been issued to customers from current inventory stock.

We requested that the Test and Evaluation Office, Logistics Support Office, General and Industrial Directorate provide us with a list of nonconforming items identified during testing in Fiscal Year 1999 under the Product Verification Program. The Test and Evaluation Office identified 22 nonconforming (test failed) items, which represented more than 38,000 units purchased. The Office further indicated that these nonconforming items contained 13 major defects and 9 minor defects. A major defect is considered likely to result in a failure or in a reduction in the usability of the item for its intended purpose. Furthermore, 9 of the 13 major defects involved critical items. These critical items relate to weapon systems such as the F-15 and Harrier fighter jets, C-130 cargo aircraft, and the Navy DDG class destroyers.

Before the General and Industrial Directorate reorganized in July, 1999, quality assurance personnel in the Directorate were responsible for entering nonconforming items identified through testing into the Customer Depot Complaint System. These personnel also distributed the test results to the appropriate Quality Assurance Specialists for investigation and resolution. Quality Assurance Specialists investigated test validity, contractor responsibility for the nonconforming items, parts usability, and the quantity and location of the remaining items. Subsequently, Quality Assurance Specialists may determine that disposal of the test sample and remaining inventory was necessary to protect the integrity of the inventory.

We determined that the 22 items that failed testing in Fiscal Year 1999 were not entered into the Customer Depot Complaint System and that test results were not distributed to the appropriate Quality Assurance Specialists for investigation and resolution. As much as 18 months have passed since failed item were identified. Consequently, nonconforming items, most likely, have been issued. The crucial functions of entering test data into the Customer Depot Complaint System and distributing it to the Quality Assurance Specialists have not been performed since the General and Industrial Directorate has been reorganized.

We recommend that the General and Industrial Directorate immediately perform the functions related to the recording and notification of test failures. We also recommend that the Directorate address the 22 items that failed testing in Fiscal Year 1999 by notifying all respective Quality Assurance Specialists of the nonconforming items and insuring that all customers are properly informed. Without this crucial link between product testing and quality assurance, the likelihood of issuing nonconforming items containing major defects has continued and will continue. We consider this condition to be an internal management control weakness and recommend that it receive immediate attention.

Please response to any actions taken or contemplated by July 5, 2000. If you have any questions on this matter, contact Mr. Nick Como at (703) 604-9215.



Paul J. Granetto
Director
Contract Management Directorate

cc:
DLA Product Verification Program Manager

Appendix C. Test Results – Defense Supply Center, Philadelphia (Command Reply)



N REPLY
REFER TO

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JULY 19, 2000

**DEFENSE LOGISTICS AGENCY
DEFENSE SUPPLY CENTER PHILADELPHIA
700 ROBBINS AVENUE
PHILADELPHIA, PENNSYLVANIA 19111-5092**


MEMORANDUM FOR DIRECTOR, CONTRACT MANAGEMENT DIRECTORATE
DOD INSPECTOR GENERAL

SUBJECT: Inventory Integrity – Final Report on Nonconforming Items

As a follow up to your June 8, 2000 Memorandum on the subject and our June 12, 2000 interim response, this correspondence summarizes the actions we have undertaken to rectify your Team's findings and to ensure effective, systemic controls of our quality assurance process.

Written notification of your Team's specific findings were provided to the Quality Assurance Specialists (QASs) in our buying units. Included with that notification were the related test project folders identifying all non-conformance test findings. The QASs are currently investigating the non-conformance findings and are pursuing appropriate follow-up actions, as warranted, to rectify the situation-i.e., advising customers, screening the inventory, and performing other related tasks to effect responsible project disposition.

Written instructions were issued to all Test and Evaluation (T&E) personnel reiterating procedures to be followed for proper processing of test findings. In addition, detailed standard operating procedures addressing that process were developed and provided to all General and Industrial Directorate T&E and QAS personnel and their supervisory chain to the Office Chief level. These procedures stipulate the requirement and process for entry into the Customer Depot Complaint System of non-conformance findings resulting from random inventory testing projects and provide the needed oversight to ensure this action is systematically effected.


DANIEL G. MONGEON
Brigadier General, USA
Commanding

cc:
DLA Product Verification Program Manager
RADM Stone, SC, USN, (J-3), Commander, Defense Logistics Agency

Appendix D. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition, Technology, and Logistics
Deputy Under Secretary of Defense (Logistics)
Under Secretary of Defense (Comptroller)
Deputy Chief Financial Officer
Deputy Comptroller (Program/Budget)

Department of the Army

Assistant Secretary of the Army (Financial Management and Comptroller)
Auditor General, Department of the Army

Department of the Navy

Naval Inspector General
Auditor General, Department of the Navy

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Auditor General, Department of the Air Force

Other Defense Organizations

Director, Defense Logistics Agency
Director, Product Verification Program
Director, Defense Supply Center Columbus
Director, Defense Supply Center Philadelphia
Director, Defense Supply Center Richmond

Non-Defense Federal Organizations and Individuals

Office of Management and Budget

Congressional Committees and Subcommittees, Chairman and Ranking Minority Member

Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on Defense, Committee on Appropriations
House Committee on Armed Services
House Committee on Government Reform
House Subcommittee on Government Management, Information, and Technology,
Committee on Government Reform
House Subcommittee on National Security, Veterans Affairs, and International
Relations, Committee on Government Reform

Defense Logistics Agency Comments



DEFENSE LOGISTICS AGENCY
HEADQUARTERS
8725 JOHN J. KINGMAN ROAD, SUITE 2533
FT. BELVOIR, VIRGINIA 22060-6221

IN REPLY
REFER TO

J-33

FEB *6 2001

MEMORANDUM FOR DoD IG

SUBJECT: Audit Report on the Defense Logistics Agency Product Verification
Program (Project No. D20000CF-0111.001)

In response to your memorandum dated November 15, 2000, subject as above, we have reviewed the draft audit report, and our comments are attached. Our point of contact is Mr. Michael Shields, J-3342, (703) 767-2629 (michael_shields@hq.dla.mil).

D. H. Stone
Rear Admiral, SC, USN
Director
Logistics Operations

Attachment

Subject: Defense Logistics Agency Product Verification Program
(Project No. D2000CF-0111.001)

Finding A: Funds for product testing were not used in the most efficient manner and DoD had no assurance that critical products would perform as expected. (See page 2 of report).

DLA Comments: Non-concur. DLA currently uses a Sampling Assistance Model developed by the DLA Office of Research and Resource Analysis (DORRA) and previously approved by the DoDIG. This model generates the sample population for random testing from all available ready for issue, condition code A wholesale inventory. The objective of this random sampling is to provide a statistical inference of the quality level of all ready to issue stock. The weighting of criticality would skew the inference and result in an undesired metric. Critical items are evaluated by Product Verification Program nonrandom or directed testing projects.

Finding B: For two of the three Defense Supply Centers, test failures were not consistently investigated and required actions on test failures were not always taken. Inconsistent adjudication and ratings of test results hindered the two Defense Supply Centers from resolving contractor issues for 36 percent of the 231 FY 1999 tests reviewed, inflated quality ratings for as many as 54 contractors and allowed potentially nonconforming products to remain available for issue. (See page 9 of report).

DLA Comments: Concur. The Primary Level Field Activities (PLFAs) will review current Product Quality Deficiency Report (PQDR) processes to ensure complete investigations and satisfactory actions are taken to correct existing deficiencies.

Recommendations

A. Director, Defense Logistics Agency:

- 1. Establish random testing selection methods in Defense Supply Center product verification programs to:**
 - a. Sample all stored depot products.**
 - b. Factor product criticality.**
 - c. Include direct vendor delivery procurements.**

DLA Comments: Non-concur. DLA is currently developing a new program to replace the random sampling portion of the PVP. This program uses a total quality cost methodology to direct nonrandom testing selection to high cost drivers or factors for example, depot location, item criticality, delivery method, and customer complaint trends, which represent the highest potential rates of return in terms of customer satisfaction and reduced internal operational costs. The FY 2000-2005 Performance Contract between the Defense Management Council specifies this new program as a replacement for the current random testing Product Conformance metric in FY 02.

2. Implement nonrandom testing initiatives prescribed in Defense Logistics Agency Directive 4105.20.

DLA Comments: Concur. Our Centers are currently performing nonrandom testing as stated in the report. We are also implementing a new program as described above. The model will change our focus from testing just categories of items to testing particular items, locations, and suppliers based on potential risk and past performance.

3. Prepare trend analyses from quality deficiency reports to identify nonconforming inventory for the following products:

- a. Critical.
- b. Highly requisitioned.
- c. High-cost, high-dollar, or high-volume products.
- d. Items with known or potential deficiencies.
- e. Items from contractors with poor performance histories.

DLA Comments: Concur. DLAI 4155.2 requires DLA ICP PQDR control points to perform trend analysis on both customer PQDRs and deficiencies identified through the PVP. DLA will direct ICP Commanders to implement DLA policy requirements as defined by this instruction. In addition, the Total Quality Cost Model will also identify trends of repetitive deficiencies or other high risk cost drivers such as those cited above for corrective action to improve customer satisfaction and drive down operational costs.

B. Director, Defense Logistics Agency:

1. Develop and implement quality assurance specialist training and supervisory review procedures at Defense Supply Centers to uniformly required the quality assurance specialist to:

- a. Determine whether the contractor was at fault as a result of a test failure generated from a product verification program test.
- b. Document the causative factors for product test failures
- c. Code all contractor noncompliance performance test failures.
- d. Document disposition and corrective actions for failed product inventories with failed test results.

DLA Comments: Concur. DLA Directive 4155.24 provides general policy and DLA Instruction 4155.24 "Product Quality Deficiency Reporting Program" provides detailed procedures for reporting and processing PQDRs. Additional information on the processing of PQDRs is also available in DLA Directive 4155.2 and DLA Instruction 4155.2 "DLA Quality Assurance Program for DLA Supply Centers." Quality Assurance Specialists (QASs) also require certification in Center QA Systems under the Quality Assurance Technical Development Program. This certification addresses all areas cited above. In addition to formal training, each PLFA will provide on the job and periodic training to personnel processing and reviewing PQDRs.

2. Using FY 1999 test results, determine whether nonconforming products purchased from contractors and stocked in depots should be suspended or reevaluated.

DLA Comments: Concur. DSCP has already taken action to review FY 99 test results and take all appropriate follow up actions including those cited in the recommendation. These actions were reported in the DSCP Command Reply on July 19, 2000, attached as appendix C of this report. DSCR is currently re-evaluating their FY 99 results and will take appropriate action based on the results of this re-evaluation. DSCC requests the DoDIG identify the 49 nonconforming test results reported on Table 6, page 10 of the report. DSCC will re-evaluate FY 99 results once the 49 have been identified and will take appropriate action based on the results of this re-evaluation.

Audit Team Members

The Contract Management Directorate, Office of the Assistant Inspector General for Auditing, DoD, prepared this report. Personnel of the Office of the Inspector General, DoD, who contributed to the report are listed below.

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